APPROVED MEETING MINUTES
SOUTH CAROLINA SHORELINE CHANGE ADVISORY COMMITTEE
Topic: Beachfront Retreat Policy
February 21, 2008 – 9:00am-5:30pm

This document is not intended to be a meeting transcript, *per se*. It is a summary of key themes and some (though not all) of the background dialogue. The meeting summary's structure roughly parallels that of the meeting agenda but is not necessarily true to the temporal order of discussion. A digital recording of the meeting is located at SCDHEC-OCRM's Charleston office.

In Attendance:

1) Advisory Committee members:

Jeff Allen,	Clemson University
Sara Brown,	U.S. Army Corps of Engineers
Mark Caldwell,	U.S. Fish & Wildlife Service – *alt. for Tim Hall*
Marc Cherry,	Gramling Brothers, Inc. – *alt. for Ben Gramling*
Mary Conley,	The Nature Conservancy
Paul Conrads,	U.S. Geological Survey
Hamilton Davis,	S.C. Coastal Conservation League
Rick DeVoe,	S.C. Sea Grant Consortium
Kirstin Dow,	University of South Carolina
Paul Gayes,	Coastal Carolina University
Bob George,	G. Robert George & Associates, Inc.
Tina Hadden,	U.S. Army Corps of Engineers
Scott Harris,	College of Charleston
Mike Katuna,	College of Charleston
Norm Levine,	College of Charleston
Jim London,	Clemson University
Tara Miller,	NOAA Coastal Services Center – *alt. for Jeff Payne*
Jim Morris,	University of South Carolina
Jeff Payne,	NOAA Coastal Services Center
Aaron Pope,	City of Folly Beach – *alt. for Toni Connor-Rooks*
Linda Tucker,	City of Isle of Palms
Bob Van Dolah,	S.C. Department of Natural Resources

2) Guest Speakers:

Caitlin Dyckman,	Clemson University
Courtney St. John	Clemson University

3) S.C. Department of Health & Environmental Control:

Braxton Davis,	OCRM Science & Policy Director
Bill Eiser,	OCRM Staff Oceanographer
Shawn Kiernan,	OCRM Senior Coastal Planner
Barbara Neale,	OCRM Regulatory Director
David Pierce,	OCRM Regulatory Assistant Director
Melissa Rada,	OCRM Science & Policy Program Coordinator
Matt Slagel,	NOAA Coastal Management Fellow

4) S.C. Office of Human Resources

Nathan Strong,	Facilitator

5) S.C. Shoreline Change State of Knowledge Report Contractor:

Ross Nelson,	Tidewater Environmental Services, Inc.; Charleston, SC

Welcome and Introductions:

Braxton Davis, Director of OCRM's Science & Policy Division, provided a brief overview of the Shoreline Change Initiative and the purpose of the Advisory Committee. The Committee approved the minutes from the meeting on January 25, 2008 (the final minutes are now posted on the Shoreline Change Advisory Committee website). Dr. Davis also described the template that Committee members will use as they develop draft policy options for the future. These policy options will be included in a final report at the conclusion of the Committee's work.

Presentations:

The following presentations are available on the Shoreline Change Advisory Committee website: http://www.scdhec.gov/environment/ocrm/science/shoreline_comm_0208.htm

Beachfront Management Act – Overview of Retreat Policy
Bill Eiser, SCDHEC-OCRM

Bill Eiser, Staff Oceanographer for SCDHEC-OCRM, discussed the implementation of South Carolina's 40-year retreat policy. New erosion control structures (bulkheads, seawalls, revetments) cannot be built along the beach, and existing damaged structures cannot be rebuilt if a lot-by-lot damage assessment demonstrates that they are damaged more than 50%. Shore perpendicular structures (groins) are not considered erosion control structures, and they are allowed under a 2002 Beachfront Management Act amendment. The erosion control structures on Folly Beach may be rebuilt regardless of damage level since Folly Beach is partially exempt from the Beachfront Management Act following the construction of the Charleston Harbor jetties. (Section 111 of the 1968 River and Harbor Act, as amended, provides for the prevention of mitigation of erosion damages to public or privately owned shores when these damages are a result of a Federal navigation project.)

New habitable structures *between the baseline and the setback line* are limited to 5,000 sq ft of heated space, and they must be built as far landward as possible. New habitable structures *seaward of the baseline* cannot be larger than the largest structure in the area, and they cannot be built larger than 5,000 sq ft of heated space. They also must be built as far landward on the lot as possible, and a removal clause accompanies the permit. The removal clause states that a house must be removed if it is located on the active beach in the future (high tide brings water under the house). This permit condition has not been enforced, but there are about 60-65 houses that were permitted with the removal clause condition. Existing habitable structures that are less than 2/3 damaged can be rebuilt in place to their original size and specifications. However, habitable structures that are more than 2/3 damaged must be rebuilt as far landward as possible. Mr. Eiser also discussed the following potential obstacles to implementing retreat in South Carolina:

- Baselines can be moved seaward following renourishment projects
- Folly Beach is partially exempt from the Beachfront Management Act, and the baseline is the line of existing erosion control structures (no setback line)

- Minimum setback is only 20 ft for stable or accretional beaches
- U.S. Supreme Court ruling in *Lucas v. South Carolina Coastal Council* set a precedent for regulatory "takings" claims
- Strong public resistance to retreat
- 5,000 sq ft is still a large house, and the investment aspect of these properties must be considered

It is very difficult to proactively retreat from eroding shorelines due to public resistance, politics, and economic concerns. Retreat typically only gets implemented after significant storms.

Question and Answer session with Mr. Bill Eiser:

Q- Has the 20 ft minimum setback requirement ever been reevaluated for areas that are no longer stable or accretional?

A- The baseline and setback line positions and erosion rates are updated every 8-10 years. It is possible that a previously stable beach can be categorized as erosional in the future if an erosion rate is determined. The calculated erosion rate would cause the setback line to be more than 20 ft seaward of the baseline because the setback line position is determined by multiplying the average annual erosion rate by 40 years. For stable or accretional beaches, the Statute would have to change to increase the minimum setback requirement.

Q- If a storm causes formerly private land to become submerged, who owns the land after the storm?

A- The CZMA claims that the state owns property below MHW, but if the beach recovers or accretes, the private owner may be able reclaim the land up to the original MHW line at the time the property was platted.

Additional information: OCRM staff are not aware of any South Carolina case law that specifically addresses the matter of whether a littoral landowner regains title to beaches raised by state or federal renourishment projects.

Q- As the baseline position is revised every 8-10 years, is the landward rate of movement of the baseline in eroding areas approximately the same as the average annual erosion rate for that same area?

A- Without having done that calculation, Mr. Eiser responded that the rate of landward movement of the baseline and the erosion rate in the same area are probably fairly close. However, the baseline position is calculated in different ways based on whether the beach in question is within a Standard Erosion Zone, Stabilized Inlet Erosion Zone, or Unstabilized Inlet Erosion Zone. Also, the erosion rates are long-term rates averaged over decades whereas the short-term landward migration of a dune (from which the baseline position is determined) may be greater or less than the long-term rate.

Q- How will changes in flood insurance policies affect retreat?

A- The availability of federal flood insurance for beachfront property owners is one consideration that prevents retreat from occurring. Dr. Davis mentioned at

this point that he is trying to bring someone from the insurance industry to speak at a future Committee meeting.

Q- If an existing seawall is destroyed 25%, is a permit needed to repair it? Also, can only the damaged portion be repaired, or can the entire wall be maintained at this time?
A- The entire seawall can be maintained as part of the repair work as long as the wall stays at its original dimensions and design. Typically, an authorization letter from OCRM would be issued allowing the maintenance and repair work to begin.

Q- Would OCRM permit a new seawall to be built on Folly Beach seaward of the baseline?
A- Probably not. Even though Folly Beach is partially exempt from the Beachfront Management Act, there are enough other policies that exist that would probably prevent a new seawall from being allowable. However, Folly Beach does not have a setback line, so a new seawall could be built immediately landward of the baseline, and this new wall would be out of OCRM's jurisdiction. The City of Folly Beach could still prevent this even though the state could not.

Q- Regarding the 20 ft minimum setback requirement for stable or accretional beaches, are there any LIDAR or survey data that would show a more appropriate minimum setback so that large dunes are protected in these areas?
A- Mr. Eiser is unaware of such data , but agrees that an increased minimum setback distance would allow for dunes to remain functional.

Q- Does OCRM have minimum setback requirements for marsh shorelines?
A- No, but a few local governments have buffer ordinances and setbacks based on the OCRM critical line.

Q- Do we have an estimate of the value of at-risk structures along the SC coast?
A- A Committee member mentioned the National Ocean Economics Program, which provides some national coastal economy values. http://noep.mbari.org/

Overview of Clemson Research on Beachfront Policies
Dr. Jim London, Dr. Jeff Allen, Dr. Caitlin Dyckman, & Courtney St. John, Clemson University

Dr. Caitlin Dyckman is an Assistant Professor in the Department of Planning and Landscape Architecture at Clemson University. She and her colleagues are working on an assessment of shoreline change management options for South Carolina. The first part of the research will involve gathering data on the evolution of Coastal Zone Management (CZM) throughout the country. They will examine past and current beachfront policies in other coastal states, and determine the feasibility and applicability of these options in South Carolina. A historical overview of retreat strategies compared across urban and commercial, residential, and undeveloped shorelines will reveal novel approaches that are

emerging. Once a regulatory database is in place, the Clemson group will obtain stakeholder input through brief phone surveys and interviews of CZM managers in South Carolina and other coastal states. The initial surveys will reveal 'cutting edge' states in different geographic areas with innovative policy options, and a list of names and contact information in these states will also be generated. To make comparative assessments of the different states' policies and their effects on development patterns, a matrix of key regulatory and market incentive policies will be created, probably by the end of April. The matrix will be weighted and will focus on the following five critical policy features:

1) Whether, when and how a state has taken a strategic retreat approach
2) Hard stabilization
3) Soft stabilization (renourishment)
4) Redevelopment
5) Sea level rise strategies

The matrix and regulatory database will provide baseline data that will be used in the second part of the Clemson group's research, which Dr. Jim London describes below.

Dr. Jim London is the Director of the City & Regional Planning Program at Clemson University. The second component of the Clemson group's research will focus on the last 20 years since the Beachfront Management Act was implemented, and will try to determine the economic impact of the Act and whether it has affected coastal development. They will gather information regarding jurisdictional lines, historical physical and economic change and projections along the coast, building footprints, and parcel and property tax data. Furthermore, they will identify where beach renourishment has occurred and where hard erosion control structures exist along the beachfront. With this data, the researchers will look at current conditions and low and high future erosion scenarios to determine economic impacts. For example, with renourishment, Myrtle Beach has stabilized the shoreline, but scenarios without renourishment need to be analyzed as well. They will determine economic values along the shoreline by working with local officials, and they will survey Chambers of Commerce, tourist groups, the hotel industry, NGO's, and other interested stakeholders to determine their opinions of retreat. The work will parallel the work of the committee, and a final report should be available around the end of the calendar year.

Question and Answer session with Clemson group:

Q- When looking at possible loss of value along the beachfront due to retreat, Orrin Pilkey has said that it is not a problem because the vibrant economic base on 1st Street will move to 2nd Street, etc. Is there the possibility of actually gaining value with the new beachfront following retreat?

A- Dr. London has not seen this calculated or estimated before, since people typically focus on the value of the loss of property. For example, if part of a dune is lost, part of the value of the now vulnerable structure is usually lost as well. Ultimately, the 2nd and 3rd row structures may become oceanfront and realize short-term economic benefits, but they too may then disappear in long-term scenarios. If physical change can be simulated, estimated economic costs associated with that change can be determined.

Q- Do you have plans to use this same approach with marsh shorelines, or can your methods be applied to marshfront property?
A- Marsh shorelines have been part of their discussions, and Dr. London agrees that they should be looking at marshfront in addition to oceanfront property.

Q- What would the net loss in tax revenue have been if Myrtle Beach had not been recently renourished? Would there have been a loss?
A- There probably would have been losses in tax revenue due to decreased tourism if Myrtle Beach was not renourished, but renourishment will be more and more costly over time. Myrtle Beach can pay for renourishment because it generates enough tourism activity, but 'who should pay for renourishment?' is a question that will always be asked in other areas. Also, what is the cost-benefit tipping point of renourishment; when do the costs outweigh the benefits?

Q- Your proposed work involves looking at property values in 1988. Why was that year selected?
A- These property values would be considered 'pre-Beachfront Management Act' since the Act became law that year.

Q- Will the Clemson report provide policy recommendations for better beachfront management? That seems counterproductive to the work of the Committee.
A- The Clemson group's work will parallel the work of the Committee, and they will identify policy options, but they will not make formal policy recommendations themselves.

Adapting to Sea Level Rise
Dr. Kirstin Dow, University of South Carolina

Dr. Kirstin Dow is an Associate Professor in the Department of Geography and Affiliated Faculty in the School of the Environment at the University of South Carolina. Many states have initiatives focused on climate change mitigation activities, and a few states including Alaska, Washington, California, and Maryland are working on adaptation to sea level rise. An ongoing assessment in Maryland is considering basic needs, data accessibility, existing decision structures and processes, adaptive capacity building, and monitoring. Throughout the country, many guidebooks, case studies, and process oriented examples of sea level rise adaptation are surfacing. For example, Miami-Dade County, Florida has mapped sea level rise scenarios using LIDAR data and a basic inundation "bathtub" model to increase public awareness and discussion of sea level rise possibilities.

Maryland has recently assembled a Commission on Climate Change, including an Adaptation and Response working group for research, discussion, and policy development using a similar template process. Dr. Dow is helping to facilitate the work

of this working group, which functions in a similar fashion to this Shoreline Change Advisory Committee. There are four technical working groups within the Adaptation and Response group, and they are focused on the following:

- Existing built environment and infrastructure
- Future built environment and infrastructure
- Human health, safety, and welfare
- Resource based industries

Some of the adaptation options identified by the Adaptation and Response group are cross-cutting and include:

- Technological development
- Government planning, monitoring, and assessment
- Integration and coordination of planning efforts between state and local govts
- Better building and development standards (land use, freeboard, etc.)
- Integration of spatial data systems to foster innovation and support the implementation of policy
- Evaluation of coastal protection structures (hard vs. soft, design standards, decisions to modify, replace, or abandon)
- Hazard preparedness and emergency planning that can capture local variability
- Public awareness and capacity building

The Maryland Commission on Climate Change is a work in progress, and more information can be found here: http://www.mdclimatechange.us/index.cfm

Question and Answer session with Dr. Kirstin Dow:

Q- Do sea level rise maps or other visualization tools exist for South Carolina?
A- A simple bathtub inundation model exists for the Charleston peninsula, and graduate students at the South Carolina universities have used LIDAR data to perform inundation models for various local areas. These models do not include a timeframe component since there is so much uncertainty when trying to estimate when a given sea level rise scenario will occur. Sea level rise maps and models are powerful tools for increasing public awareness of what *could* happen, but a reliable time component is still missing.

Q- Is the South Carolina Governor's Climate, Energy, and Commerce Advisory Committee doing similar work as the Maryland Commission on Climate Change, or is the South Carolina committee focusing more on energy, commerce, carbon trading, etc.?
A- The mandate to the South Carolina committee did not include climate change adaptation, but a cross-cutting technical working group has recommended that adaptation planning similar to the Maryland efforts occur.

Comment- a member of the Shoreline Change Advisory Committee thinks it would be beneficial for one of the members of the South Carolina Governor's

Climate, Energy, and Commerce Advisory Committee to come speak to the group about the work they are doing.

Overview of Afternoon Process:

Before lunch, Nathan Strong, Facilitator for the Shoreline Change Advisory Committee, provided an overview of the agenda for the afternoon sessions, and he asked the Committee members to brainstorm a few foreseen problems with retreat policy. Some issues raised were: determining who assumes risk, litigating "takings" claims, calculating a defendable rate of sea level rise, establishing retreat policies in local plans, and creating incentives to make retreat work.

Facilitated Discussion:

Nathan Strong then led the Committee in a discussion of potential policy options relating to retreat that they would like to explore in the following three categories:

1) Regulatory Baselines, Setbacks, and Beach Zones
2) Other Potential Disincentives or Incentives
3) "Out of the Box" Ideas

The complete lists generated for each of these categories are below.

NOTE: This DOES NOT infer that any one or all of the Committee members are supportive of any of these ideas at this stage. This exercise was intended to allow for open "brainstorming" of ideas - even ideas that may not seem possible or preferable on the surface, to help foster discussions among the Committee.

Regulatory Baselines, Setbacks, and Beach Zones:

- No moving the baseline seaward
- Reform setback area
  - increase minimum setback requirement
  - increase multiplier to greater than 40 years
  - require natural, undisturbed buffer
  - include sea level rise
  - use v-zones
- Reform calculation of long-term erosion rate
  - use surfaces instead of lines (profiles)
  - use longer or shorter time window
- Regional approach to retreat
  - 3 regions?
  - developed/undeveloped
  - urban/residential
- Baseline delineation
  - current human footprint

  - greater than 40 year time window for Unstabilized Inlet Erosion Zones

Other Potential Disincentives or Incentives:

- Public subsidies
  - limit renourishment subsidies/additional criteria to qualify
  - align state policies with federal CoBRA Zones, etc.
- Public infrastructure
  - identify what shouldn't or can't retreat
  - limit public infrastructure in vulnerable areas
- Financial relocation/retreat incentives
  - option to apply public renourishment funds to relocation
- Redevelopment planning
  - storm readiness for mitigation/disaster relief funds to go to retreat rather than rebuilding
- Differential taxation for buildings in vulnerable/setback area
  - tax incentive to reduce size of beachfront structures
- Land/property acquisition
  - large structures
  - Open Space laws
  - buyback program
  - establish priorities based on vulnerability map
- Seawalls
  - consider no maintenance and repair
  - only repair damaged sections
  - continue sliding scale: 25%, 0%
- Federal consistency provision of Coastal Zone Management Act
- Impact fees for renourishment of land acquisition
- Clean up responsibility
  - require bonds
  - fund local governments
- Improve real estate disclosure
- Define "reasonable use"

"Out of the Box" Ideas:

- No retreat
- No change from existing policies
- No renourishment
- No net loss of beach
- Dubai/Dutch-engineered approach to the future
- No mining/scraping of beaches
  - restrict/designate areas for local governments to obtain sand
- Apply Texas model – rolling easement
- Contingency planning for emergencies
- Improve "Emergency Orders" process

- Stronger building codes
- Require gated communities to plan/fund renourishment

Decisions on Policy Options to Explore:

Once the lists of potential policy options were generated, the Committee members used "dot votes" to prioritize the options. The prioritization and synthesis of the potential policy options revealed five key issues that the Committee would like to explore further. For all of the policy options, it was agreed that the geographic context, scale, and compartmentalization of the coast should be considered. The policy options selected for full "template" development, and the volunteer subcommittees associated with each option, are as follows:

1) Reform setback area delineation
(e.g. consider Texas' example of a rolling easement)
-Scott Harris
-Jeff Payne
-Kirstin Dow
-Hamilton Davis
-Norm Levine
-Bob George
-Jimmy Chandler

2) Explore land and property acquisition / easements
(e.g. consider "priority protected areas" and differential taxation policies)
-Mary Conley
-Tina Hadden
-Sara Brown

3) Revise policy that allows seaward movement of the baseline
-Bob Van Dolah
-Rick DeVoe
-Paul Conrads

4) Limit public subsidies of developments that encroach into sensitive/vulnerable areas
(e.g. require gated communities to plan and fund renourishment)
-Jim London
-Jeff Allen
-Josh Eagle

5) Place geographic restrictions on sources of sand for beach replenishment
(e.g. disallow mining and scraping of beaches, define sand resources for local governments)
-Paul Gayes

-Hamilton Davis
-Mike Katuna
-Bob Van Dolah
-Chris Mack

Any members of the Committee who were absent from this meeting and would like to participate on one or more of the subcommittees are encouraged to contact Braxton Davis and the members in that working group.

Public Comment Period:

Reid Armstrong of the South Carolina Coastal Conservation League addressed the Committee with two recommendations. He hopes the Committee analyzes public access to beaches using historical and current data as it deliberates new policy options for beachfront management. Mr. Armstrong also recommends that the Committee consider whether local ordinances can/should have more restrictive ordinances than the state (preemption authority).

Jill Foster, Deputy Planning Director with the Town of Hilton Head, stated her appreciation for the SC Beachfront Management Act. She explained how she believes the intent of the state's 40 year retreat policy is good, but a few concerns need to be addressed. First, petitions should not be allowed to move the baseline seaward following a renourishment project. Second, the scheduled OCRM revisions of the baseline every 8 to 10 years can cause problems by moving the baseline seaward. In the Town of Hilton Head, the purpose of spending for renourishment and land acquisition has never been to allow the baseline to move seaward. As a local example, a beachfront property owner petitioned OCRM to move the baseline seaward, and this request was granted. Then, the owner sold his land to a developer who purchased the surrounding land as well. The permit from OCRM makes the developer believe he can destroy a 16 ft natural sand dune and build out to a 3 ft sand dune instead. This is a problem that should be addressed by the Committee.

Rob Rettew of the Hunting Island Beach Preservation Association commented briefly about the recent public hearing in Hunting Island regarding the minor maintenance renourishment permit for Hunting Island. He understands that the permit is close to being obtained, and explains that retreat is very important to Hunting Island leaseholders because the Department of Parks, Recreation, and Tourism (PRT)'s current policy does not allow them to move their properties landward. As proposed policies are drafted, Mr. Rettew hopes the Committee considers working with PRT and the state to determine language that would not be restrictive and would potentially allow retreat to occur in this area in the future. The Hunting Island leaseholders would like to move their houses landward within their original 50-acre deed in the future, but this is not currently allowed. They have also hired consultants from Olsen Engineering to determine the feasibility of using geotextile tube groins on Hunting Island, which could be removed in the future. Mr. Rettew submitted two PDF documents as public comment, and these will be distributed to the Committee.

A written comment was submitted by J. David Whitehouse of Seabrook Island. Mr. Whitehouse believes that local input is important in devising policies to meet the needs of the beachfront, and he thinks the Committee may be lacking input from local governments, realtors, and residents of the affected areas.

Dr. Davis responded that the Committee itself includes two local government officials, a realtor, a developer, and two engineers from the private sector, among other stakeholder groups. It cannot include everyone we would like to have involved, so we are trying to ensure as many opportunities as possible for public comment, both written and oral, throughout the process. The public is strongly encouraged to submit comments for consideration by the Committee, to help guide more thorough discussions of current issues.

Future Meeting Schedule:

Next meeting: Beach Renourishment; March 31, 2008

Place: Room 100, Burroughs and Chapin Center for Marine & Wetland Studies, Coastal Carolina University, Conway, SC

Format: Meeting during day, followed by public comment period

Next Steps and Agreements:

1) The next meeting, "Beach Renourishment," will take place on **March 31, 2008** in the Myrtle Beach area. This meeting will be followed by a public comment period.

2) A date for the sixth meeting has not yet been finalized, but this will be done over email.

3) Committee members who arrived late to the meeting or who were unable to attend are encouraged to get in touch with OCRM to listen to the full audio transcript, which is available in OCRM's Charleston office.

4) Submitted written public comment materials will be distributed to Committee members. Oral public comments are described in the meeting minutes. All public comments will be available in full at OCRM's Charleston office.

5) Prior to the next meeting, OCRM will send the Committee “homework” reading materials, an agenda for the March 31 meeting, potential dates for future meetings, and draft meeting minutes for review.

6) Meeting materials including presentations and approved minutes will be posted: http://www.scdhec.gov/environment/ocrm/science/shoreline_comm.htm